



E. coli O157:H7 Contamination of Beef – Regulatory Perspective

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FSIS Responsibility

FSIS is the public health regulatory agency within USDA

- FSIS ensures that the commercial supply of ***meat, poultry***, and processed ***egg*** food products in the U.S. is not adulterated or misbranded
- FSIS authorizing authorities (FMIA, PPIA, EPIA) do **not** bind the Agency to in-plant activity



Healthy People 2010 Objectives

Campylobacter infections*:

<u>1997 Baseline</u>	<u>2010 Target</u>
24.6	12.3

Escherichia coli O157:H7 infections*:

<u>1997 Baseline</u>	<u>2010 Target</u>
2.1	1.0

Listeria monocytogenes infections*:

<u>1997 Baseline</u>	<u>2010 Target**</u>
0.5	0.25

Salmonella infections*:

<u>1997 Baseline</u>	<u>2010 Target</u>
13.7	6.8

*Laboratory confirmed cases/100,000 humans (FoodNet)

** Changed to year 2005 by E.O. (President Clinton)



Current (2006) FoodNet Results

- STEC O157 incidence at **1.31** compared to Healthy People 2010 goal of 1.00
 - up from 1.06 in 2005 and 0.9 in 2004
 - STEC O157 illnesses did not decrease significantly from baseline period (1996-1998)*

*MMWR, CDC. Preliminary FoodNet Data on the Incidence of Infection with Pathogens Transmitted Commonly Through Food – 10 States, 2006. April 13, 2007, Page 336-339



FSIS Testing

- 1994 -
 - October 17, FSIS began collecting 5,000 samples of ground beef annually, divided equally between Federal establishments and retail operations
 - Not statistically designed, but intended to stimulate industry actions to reduce the presence of *E. coli* O157:H7
- 2007 -
 - Through December 18, FSIS analyzed 12,200 samples of ground beef at approximately 2,000 Federal establishments and retail operations (fewer than 200 samples collected at retail), with 29 positives
 - FSIS began testing manufacturing trimmings (3, 742 samples annually), including foreign produced trim.
 - FSIS put in motion a mechanism to began testing other raw beef components such as head meat and cheek meat (1,500 samples)



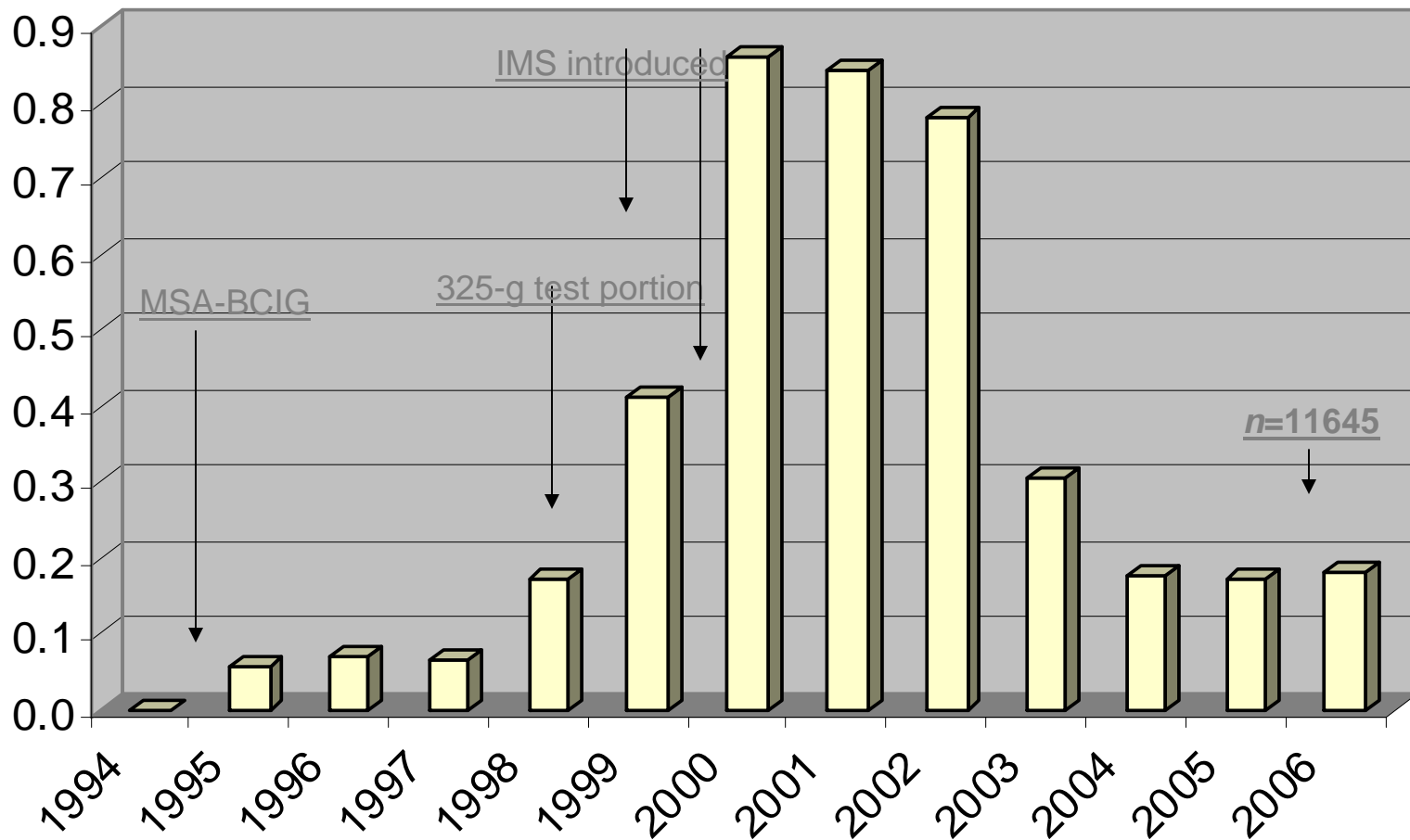
FSIS Testing Method Changes

- 1994-
 - In the wake of a large-scale outbreak related to fast-food hamburgers in the Western U.S., FSIS declares “zero tolerance” for *E. coli* O157:H7 in raw ground beef
 - FSIS monitoring begins
- 1997-
 - FSIS increases single 25-g test portion to five 65-g test portions (325 grams)
- 1999 -
 - FSIS implements new detection method based on immunomagnetic capture and chromogenic plating media
- 2006 -
 - FSIS implements BAX PCR for screening
 - FSIS initiates baseline study of trimmings used for ground beef
- 2007-
 - FSIS implements risk-based sampling

Ground beef samples positive for *E. coli* O157:H7
by calendar year

Industry reassesses HACCP

Percent positive *E. coli* O157:H7





Inspection System Design

- Microbiological data, in the form of verification testing results for each establishment, supplement on-site observations and give a perspective on compliance with regulatory requirements over time
- Changes in the % positive rate for pathogens of public health concern serve as an early warning of systemic problems arising, tracked quarterly and annually
 - Public health assumption is that a reduction in the % positive rate of product containing pathogens of public health concern should result in a reduction on disease incidence in humans



Performance Measure

- *E. coli* O157:H7
 - FSIS estimates, using attribution data, that a % positive rate not exceeding 0.20% in ground beef would achieve the Healthy People 2010 goal of 1.0 illnesses/100,000 cases (non-volume adjusted) for the ground beef contribution
 - FSIS will continue to enforce a risk mitigation strategy to keep the % positive rate below 0.20%, and continue to drive the % positive rate lower each year through 2010



2008 Focus

- *E. coli* O157:H7
 - Increasing FSIS understanding regarding control practices for all types of beef products (Checklist #5 associated with FSIS Notice 65-07)
 - Implementing targeted (risk-based) testing of trim and other raw beef components (ground beef program began January 2008)
 - Contribution of foreign raw beef for domestic use
 - Significant new focus on sanitary dressing procedures and linespeeds at slaughter

New Safety Issue

- STEC (non-O157 Shiga toxin producing *E. coli*)
 - Follow-up to October 17, 2007 public meeting;
~Spring 2008
 - Intend to initiate process to begin testing for STECs in beef in 2008

United States Department of Agriculture
Food Safety and Inspection Service



Thank you